Canadian Fisheries Governance: *The Good, the Bad and the Ugly*

by R. Quentin Grafton

Canada has one of the world's largest exclusive economic zones spanning three oceans and encompassing some highly productive fisheries. Despite these blessings, many of its marine resources suffer from overregulation, overcapacity, and depleted stocks.

What follows is a review of the state of affairs of fisheries governance in Canada including an outline of the good (the few outstanding successes that represent "best practice" management), the bad (poor governance that has resulted in depleted stocks and poor economic returns), and the ugly (decision making and political interference that has led to the collapse of fish stocks). Following this review are recommendations to promote resilient ecosystems, sustainable fisheries, and a self-reliant fishing industry.

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The good

Despite the many "bad news" fishing stories, Canada has a small number of fisheries that are examples of the world's best practices. These fisheries are characterized by an incentives-based approach to governance, rather than the "input controlled" system that encourages fishermen to catch as much as they can in a limited fishing season.

Several Canadian fisheries have adopted an incentives-based approach through the implementation of individual transferable quotas (ITQ). These rights are a proportion of the total allowable catch (TAC) and are tradeable among licence holders. Appropriate TAC combined with adequate monitoring and enforcement creates a successful fisheries governance system.

One of the outstanding economic successes of the incentive-based approach is the BC halibut fishery that has had individual vessel quotas since 1991. These rights were provided to halibut fishers with the appropriate licence based upon a formula that included catch history and vessel size. Importantly, these rights were introduced with 70 percent support of fishers.

Although the rights were initially not transferable, by 1993 the vessel quotas could be traded, thus allowing for consolidation. Much of the economic gains in the BC halibut fishery arose from a change in fishing season length from two openings (six days and four days in duration respectively) before the ITQ system was introduced, to the current 245 days. It has allowed fishers to be much more selective about when and where they go fishing, and has permitted them to sell fresh and high quality halibut at a premium price over the frozen product that previously represented the bulk of sales.

Several factors have contributed to the successes of incentive-based approaches in Canada. These include: (1) industry support and agreement over how the initial allocation of rights should be divided that increases compliance, (2) setting of TAC that is binding and ensures sustainability of stocks so that rights are valuable and promote sustainable practices, (3) removal or relaxation of input controls such as season length to reduce harvesting costs and inefficiencies, (4) transferability of harvesting rights that allows exit of fishing effort and, (5) adequate monitoring and enforcement to protect the integrity of the rights.

ITQ successes in Canadian fisheries provide a model of how fisheries management can be improved with the use of incentive-based approaches. Although by no means a panacea for all the problems in fisheries, they offer a stark con-

trast to the on-going problems in many of Canada's "command and control" managed fisheries.

The bad

One measure of overall fisheries performance is to calculate the proportion of government financial transfers (GFT) to the sector as a proportion of the total value of landings. Although a crude measure, such a ratio provides an indication as to the overall financial viability of the fishing industry. Countries with high ratios are often characterized by overcapacity and low economic returns. This is because economic and social problems encourage subsidies, and also make it much more difficult politically to reduce catches in response to declines in stocks.

The Organisation for Economic Co-operation and Development (OECD) has undertaken comparisons of its members in terms of GFT as a proportion of the total value of landings in marine capture fisheries. For comparative purposes, those countries that have been in the forefront of implementing incentive-based fisheries management—New Zealand and Iceland—have a GFT-to-value-of-landings ratio of about 3 to 5 percent. By contrast, the average for all OECD countries in 2003 was about 20 percent, while Canada's ratio is over 30 percent. This suggests that despite the "best practice" performance in some Canadian ITQ fisheries, the overall performance of Canadian fisheries management is well below potential, and inferior to many of its peers.

The BC salmon industry is illustrative of what is wrong with the management of many of Canadian fisheries: a failure to consider the incentives faced by fishers. Traditional input-controlled management has failed to promote resilience in the industry to cope with declines in prices and catches. Moreover, controls have prevented fleet rationalization that would have improved economic efficiency and net returns.

The key instrument used by the Department of Fisheries and Oceans (DFO) to address chronic overcapacity in the salmon industry has been the use of buy-backs of vessels and/or fishing licences. There have been five major buybacks over the period 1970-2000, the most substantial being the 1998-2000 buyback that reduced the number of vessels by half. Despite real expenditures of almost Cdn $300 million over the past three decades, the buybacks have failed to deliver long-term benefits, or a resilient fishery, because fishing effort is able to creep back so long as the "race to fish" remains.

The primary cause of the unfortunate state of affairs in the Atlantic Canada's groundfish fisheries is poor governance.

Notwithstanding its successes in other fisheries, the introduction of ITQ into the salmon fishery is problematic given the highly variable nature of salmon runs, and the need to ensure an adequate number of salmon manage to escape the fisheries to spawn. Due to the nature of the fishery, the fishing season is necessarily short, regardless of the management regime, and there is a critical need for in-season adjustments to ensure enough salmon swim up river to spawn.

The ugly

Much has been written about the collapse of the northern cod fishery in the early 1990s—perhaps the biggest disaster to befall any Canadian natural resource. Combined, programs to address the collapse have provided over Cdn $3 billion of assistance. They have provided income support to fishers and processing workers and included buy-backs of fishing licences, cancellation of inactive licences, and the creation of a "core" or professional group of fishers. Unfortunately, they have failed to change the underlying incentives that have led to excess fishing effort and overharvesting that contributed to the stock collapses.

The primary cause of the unfortunate state of affairs in Atlantic Canada's groundfish fisheries is poor governance. Despite a shift towards co-management in the past decade, fisheries management remains essentially hierarchical.

In a blatant example of political interference in operational issues, access rights in the form of fisheries licences have been given to out of work groundfish fishers with little consideration as to the problems such a move would generate in overcapacity or overharvesting. For instance, the number of crab licences went from about 70 in the early 1980s to 600 by 1988 as crab licences were used to "compensate" fishers no longer able to make a living from groundfish. Such compensation—using access to a public resource to

address social and regional development problems—accelerated in the 1990s following groundfish harvesting moratoria. As a result, the present number of licences in Newfoundland and Labrador now exceeds 3,400 or almost 50 times higher than the number 25 years ago.

The huge expansion in snow crab licences has resulted in tens of thousands of extra traps in the water and chronic overcapacity that will eventually generate another Atlantic fisheries crisis whenever stocks decline due to the cyclical nature of the resource, assisted by high exploitation rates. In this "top down" approach to fisheries management where all power is vested in one individual, the Minister of Fisheries and Oceans, crab fishers will, quite understandably, blame the federal government for the overexploitation and demand their own structural adjustment package.

The key point is that the role of elected officials should be to help set the "rules of the game" and higher-order goals, not make operational decisions. As the example of Atlantic Canada's groundfish fisheries shows, political interference that uses a public resource to foster social objectives, such as employment maximization, eventually leads to an ever-descending spiral of unsustainability, low returns, and government bailouts. Ultimately, this also undermines the social objectives as well by reducing or eliminating employment and income opportunities.

It is in this sense that some of Canada's most valuable fisheries suffer from a "resource curse"—the very size and abundance of the resource has encouraged ministers of fisheries to use them as employers of last resort. By contrast, a sustainability perspective would view fisheries as a valuable natural asset that should be managed for the present and future to provide a positive rate of return to its owners, the Canadian public.

Ways forward

The key to more effective management and better ecosystem and fisheries outcomes is to recognize the underlying incentives of fishers. The crucial step forward for Canadian fisheries is to (1) adopt incentive-based approaches to prevent overcapacity, (2) effectively manage uncertainty to avoid stock collapses, and to (3) connect higher-level goals, such as sustainability, with day-to-day decisions in a transparent, accountable, and adaptive way so that operational errors are identified and corrected in a timely manner.

The way forward for Canadian fisheries is to try to ensure marine ecosystems are able to quickly return to their former state following adverse environmental shocks, and a self-reliant fishing industry that is robust to cycles of abundance, rising fuel costs, and the ups and downs of fish markets. There is a limit to robustness and so the goal should be to have a flexible and dynamic industry that evolves appropriately with changing economic and environmental conditions. It involves (1) effective decision-making (accountability, transparency, political independence at the operational level), (2) systematic risk assessment and management, and (3) incentives-based approaches to sustainable fisheries.

The recommended approach requires the collection of appropriate ecosystem, fishery, and economic performance indicators data. Unfortunately, the data collection job is of such a scale that it is beyond the scope of typical operators. However, once collected, the information could ensure that fishers avoid taking unnecessarily high risks on the job. It also demands less political interference in operational management of the fisheries such that experts are given the authority to make decisions and are accountable for those decisions.

Sustainable fisheries demand that managers explicitly account for uncertainty over the current and future state of the marine environment, and the effects of management actions. Sustainable fisheries are complemented by a viable and profitable fishing industry. The history of management in Canada and elsewhere shows that, in general, coercion to control fishers is ineffective at promoting self-reliant fisheries. By contrast, incentives-based approaches in Canada, New Zealand, and Iceland have delivered profitable and sustainable fisheries.

The successful expansion of incentives in the form of ITQ, community rights, or territorial user rights in Canadian fisheries is, however, dependent on setting the appropriate TAC or escapement, and adequate monitoring and enforcement. Beyond rights for target species, incentives can also be developed to reduce the number of animals accidentally caught in the fishing gear.

Better fisheries outcomes require governance where managers are held accountable to independent boards of experts and stakeholders. Better fisheries outcomes also require that major decisions, and the information on which they are based, be fully transparent along with a shift in management tactics that involves explicit risk assessment and systematic management strategy evaluations. Equally as important, a system of governance must be developed in all Canadian fisheries to give fishers and/or their communities the appropriate incentives to promote sustainable fishing practices and to generate a self-reliant fishing industry.